PATENT

Atty Docket No.: 200207272-1
App. Ser. No.: 10/789,744

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the claim amendments and following remarks.

By virtue of the amendments above, claims 1, 4, 7, 10, and 14 have been amended and claims 2 and 8 have been canceled without prejudice or disclaimer of the subject matter contained therein. Support for the amendments may be found in originally filed claims 2 and 8 and page 5, lines 15-30, page 6, lines 1-15, and page 8, lines 5-15 of the originally filed specification. Accordingly, claims 1, 3-7, and 9-14 are currently pending, of which claims 1, 7, and 14 are independent.

Claims 1-3 and 14 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Minowa (U.S. Patent No. 5,183,333) referred to as "Minowa."

Claims 1-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U.S. Patent No. 5,097,189) referred to as "Ito", in view of Lane (U.S. Patent No. 1,773,535) referred to as "Lane".

No new matter has been introduced by way of the claim amendments; entry thereof is therefore respectfully requested.

Drawings

The Official Action asserts that the drawings are objected to because, in paragraph 0021, line 3, the clutch weight is labeled with the reference numeral "216". The specification has been amended herein to change the reference numeral of the clutch weight in paragraph 0021, line 3, to "216a".

The drawings were also objected to because the specification allegedly fails to describe reference numeral "204," which is shown in Fig. 2B. Accordingly, the specification has been amended to include a description of reference numeral "204." Therefore, the drawings and the specification containing the accompanying description of the drawings are in compliance with 37 CFR 1.21(d) and 37 CFR 1.84(p)(5) and withdrawal of the objections thereto is respectfully requested.

Claim Rejection Under 35 U.S.C. §102

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

> Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1-3 and 14 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Minowa. For at least the following reasons, it is respectfully submitted that this rejection is improper and should be withdrawn.

Independent claims 1 and 14 have been amended to include, *inter alia*, that the

> "variable speed drive motor is configured to propel a movable carriage along a slide rod, wherein the movable carriage supports print heads having an ink ejecting nozzle, and wherein the variable speed drive motor is an electric motor having a gear ratio resulting in a high carriage speed and a gear ratio resulting in a low carriage speed."

Minowa fails to disclose at least these features. The Official Action cites figures 10A and 10B and column 6 of Minowa as allegedly disclosing the claimed variable speed driver motor. However, the motor described in the cited passages of Minowa is a ribbon winding motor 69 (column 3, lines 46-55 and column 5, lines 60-65 of Minowa), which is located inside the carriage 4. Therefore, the motor described in the cited passages as allegedly disclosing a mechanism having different gear ratios, in fact, does not propel a movable carriage along a slide rod. In contrast to the claimed features, the ribbon winding motor 69 of Minowa is used to wind an ink ribbon cartridge 3. Accordingly, Minowa fails to disclose a motor having different gear ratios configured to propel a movable carriage along a slide rod.

Moreover, the ribbon winding motor 69 of Minowa does not have different gearing ratios for a "high carriage speed" and a "low carriage speed," for several reasons. First, the ribbon winding motor 69 is not configured to propel a carriage, or any device, as set forth above. Second, the gearing mechanism of the ribbon winding motor 69, as displayed in figures 10A and 10B of Minowa, is not operable to change the speed of any device. As Minowa explains, the ribbon winding motor 69 utilizes a gearing mechanism to obtain different pressures based on the type of print media, *i.e.*, tape or paper, used in

the printer of Minowa (column 6, lines 10-45). The ribbon winding motor 69 is only used to move the thermal head 1 closer to the platen 128 when different types of print media are used. Thus, the ribbon winding motor 69 does not utilize the gearing mechanism to move a device at different speeds.

The Office Action cites figure 8 as allegedly disclosing a motor having different gears to move a carriage at different speeds. However, figure 8 shows the movement of the carriage 4, which is moved by the carriage motor 6. The carriage motor 6 is a standard stepper motor and does not have different gears. Thus, the movement of the carriage 4 and the acceleration chart shown in figure 8 have no relation to the ribbon winding motor 69 having the different gears shown in figures 10A and 10B. It appears that the Official Action is attempting to piece together unrelated parts of the disclosure of Minowa in an effort to recreate the features of the claimed invention. In any regard, Minowa fails to at least disclose a variable speed drive motor having different gear ratios for moving a carriage at different speeds.

For at least the foregoing reasons, it is respectfully submitted that Minowa fails to disclose each and every element claimed in independent claims 1 and 14 of the present invention and therefore cannot anticipate these claims. The Examiner is therefore respectfully requested to withdraw this rejection and to allow claims 1 and 14 and claims 2 and 3, which depend upon allowable claim 1.

Claim Rejection Under 35 U.S.C. §103

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

Claims 1-14 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Ito in view of Lane. This rejection is respectfully traversed for at least the following reasons.

Independent claims 1 and 7 have been amended to include, *inter alia*, that the

> centrifugal clutch is an automatic two-way clutch, such that switching between the gear ratio resulting in the high carriage speed to the gear ratio resulting in a low carriage speed and switching between the gear ratio resulting in the low carriage speed to the gear ratio resulting in the high carriage speed both occur automatically based upon the operational speed of the drive motor.

Similarly, independent claim 14 has been amended to include, *inter alia*, that the

> switching between the gear ratio resulting in a high carriage speed to the gear ratio resulting in a low carriage speed and switching between the gear ratio resulting in the low carriage speed to the gear ratio resulting

in the high carriage speed both occur automatically by means actuated by the operational speed of the drive motor.

Both Ito and Lane, taken alone or in combination, fail to teach or suggest at least these features. Ito is drawn to a recording apparatus in which a standard stepping motor is used as a driving source to reciprocate a carriage (abstract). The Official Action concedes that Ito fails to teach or suggest a mechanism for switching between different gear ratios, but asserts that Lane as teaches a centrifugal clutch to switch between different gear ratios. Lane, however, fails to teach or suggest the use of a two-way centrifugal clutch. Instead, the clutching mechanism in Lane is a one-way clutch (column 5, lines 55-64; column 10, lines 105-110; and column 11, lines 5-10). That is, when the speed of the motor in Lane increases, the centrifugal force changes the speed ratio of the driving shaft to a one to one ratio (column 10, lines 80-85). However, to change the speed ratio out of the one to one drive, an "operator" must manually move a shaft to change the position of a pawl (column 9, lines 12-20). Lane further explains that the changing of the gearing ratio in the one-way clutch is "effected through the manual engagement of the pawl" in column 11, lines 24-35. Therefore, Lane is a one-way clutch in which the gearing ratio automatically changes as speed increases, but must be manually changed by an operator as speed decreases.

As such, the one-way clutch of Lane does not switch from both a gear ratio resulting in a high speed to a gear ratio resulting in a low a speed and from the gear ratio resulting in a low speed back to the gear ratio resulting in a high speed automatically based upon the operational speed of the drive motor, as recited in independent claims 1,

7, and 14. This is because the one-way clutch of Lane only operates automatically in one direction, as set forth above.

In addition, even if the cited references taught the claimed features, which they do not, Ito and Lane are non-analogous art and cannot be properly combined. The MPEP states that "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicants endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992); *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993); and *State Contracting & Eng'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1069, 68 USPQ2d 1481, 1490 (Fed. Cir. 2003). (See MPEP 2141.01(a)).

Here, Lane is clearly not in the same field of Applicant's endeavor and is not pertinent to the particular problem Applicant is concerned with. The Applicant is concerned, in part, with the creation of an improved electronic printing device. In contrast, Lane is concerned with an internal combustion engine for an automobile (column 2, lines 55-65). In fact, the printing devices described by the Applicant did not exist in 1929 when the Lane reference was filed. Therefore, the automobile transmission of Lane cannot properly be considered as within the Applicant's field of endeavor or pertinent to the particular problem with which the Applicant is concerned.

Similarly, Lane is clearly not in the same field of Ito's endeavor, nor is Lane pertinent to the same problem with which Ito was concerned. Ito is drawn to an electrical

recording apparatus, which involves moving a relatively small carriage over a print media. Lane, on the other hand, is drawn to an internal combustion engine for automobiles, as set forth above. Lane has no relevance, whatsoever, to a modern recording apparatus. In fact, the devices described by Ito did not exist at the time Lane's automobile transmission was invented. The only remote commonality between the two references is that they both generally involve movement via a motor. By the reasoning proffered in the Official Action any system or method in existence that somehow envisions the use of a motor would be considered analogous art, capable of combination in a rejection. However, this reasoning is an improper basis for considering reference analogous.

The Official Action relies on a generic passage in column 1, lines 25-34, in which Lane states that the motor vehicle transmission may "find expression in a speed changing mechanisms for other power transmissions." However, this broad statement does not render the reference properly combinable, because the recording device of Ito and the automobile engine of Lane are in completely different fields. For instance, the motor of Ito is an electric motor used to move a relatively small component a relatively small distance. In contrast, the motor of Lane is a large gasoline-burning internal combustion engine used to move an automobile over presumably long distances. Thus, Lane and Ito are not properly combinable, because they are not in the same field of endeavor or concerned with solving a similar problem.

The Applicant further notes *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993). Wang involved claims directed to single in-line memory modules (SIMMs) for installation on a printed circuit motherboard for use in

personal computers. The court held that reference to a SIMM for an industrial controller was not necessarily in the same field of endeavor as the claimed subject matter merely because it related to memories. The reference was found to be in a different field of endeavor because it involved memory circuits in which modules of varying sizes may be added or replaced, whereas the claimed invention involved compact modular memories. Furthermore, since memory modules of the claims at issue were intended for personal computers and used dynamic random-access-memories, whereas reference SIMM was developed for use in large industrial machine controllers and only taught the use of static random- access-memories or read-only-memories. Here, the rejection is analogous to *Wang* because the Official Action asserts that the two references are analogous merely because they both utilize a motor. Therefore, just as the Wang court ruled that two references cannot be considered analogous just because they are both related to memories, the two references cited in the Office Action cannot be considered analogous just because they both utilize motors.

It is important that the references be analogous because the MPEP further requires that "in determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Thus, an obviousness rejection requires a showing that a person having ordinary skill in the art would consider the references sufficient to make the proposed combination. Here, a person having ordinary skill in the art would not consider Ito and Lane combinable, because they are drawn to

dramatically different fields of endeavor and would not function properly if combined. That is, the clutch of Lane could not be combined into the recording apparatus of Ito. Ito's recording apparatus may be an ink jet printer or a bubble jet printer (column 2, lines 5-9). Although Ito does not specifically refer to a size of the printer, one can infer from the intended utility of a printer and from similar printers known in the art, that the recording apparatus may be configured to sit atop a desk or table and print to standard 8.5 X 11 inch paper. Therefore, the motor to move the carriage of Ito to facilitate the printing must be even smaller than the overall size of the printer in order to fit and function properly inside the recording apparatus.

In contrast to Ito's printer, Lane is concerned with the creation of automobile engines, which are considerably larger than the Ito printer. Therefore, a person having ordinary skill in the art could not simply remove the clutch from the automobile engine of Lane and place the clutch inside the Ito printer. Such a combination appears to be unreasonable and impossible. A highly skilled technician would be required to redesign the clutch of Lane, fabricate all new parts, and determine how to integrate this new device into the printer of Ito. In fact, multiple technicians skilled in a variety of different disciplines, such as engine design, metal fabrication, etc. would be required to design and fabricate the clutch of Lane to render it suitable for the Ito printer. Therefore, Lane could not possibly be combined with the recording apparatus of Ito without substantial redesign and experimentation. Accordingly, a person having ordinary skill in the art would not have been properly motivated to combine Ito and Lane.

Moreover, the proposed combination of Ito and Lane fails to yield all of the features of independent claims 1, 7, and 14 and the claims that depend therefrom, as set

forth above. Therefore, a *prima facie* case of obviousness has not been established under 35 U.S.C. § 103. Accordingly, the Examiner is respectfully requested to withdraw the rejection of claims 1-14 and to allow these claims.

In addition, the proposed combination of Ito and Lane fails to teach or suggest the features of claims 4 and 10. For example, Ito and Lane do not teach or suggest that the "operation of the drive motor at a low speed causes the mechanism for switching between gear ratios to disengage the ring gear causing the sun gear to turn the planet gears," as recited in claims 4 and 10. As set forth above, an operator must manually change the gear ratio in the clutch of Lane when transitioning to low speeds.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below.

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Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

Dated: June 19, 2007

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